

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

1. (currently amended) A magnet assembly comprising:
a first and a second sets-set of coils for generating to generate respective magnetic fields, wherein ~~the coils of the first and the second set~~ are constructed and arranged such that under working conditions, a first homogeneous region can be generated within an envelope defined by the magnet assembly and a second homogeneous region can be generated outside the envelope, ~~the a~~ resultant magnetic field in each of the first homogenous region and the second homogenous region being sufficiently homogeneous to enable a NMR process to be performed on an object in the respective first and second homogenous region.
2. (original) An assembly according to claim 1, wherein the coils are operable to generate the first and second homogeneous regions simultaneously.
3. (original) An assembly according to claim 1 , wherein the first set of coils define a solenoid.
4. (original) An assembly according to claim 1, wherein the first set of coils are actively shielded.
5. (original) An assembly according to claim 2, wherein the second set of coils are nested.
6. (original) An assembly according to claim 5, wherein the nested coils are substantially coplanar.
7. (original) An assembly according to claim 5 , wherein at least two of the coils of the second set are arranged to carry working currents in opposite senses.

8. (original) An assembly according to claim 5, wherein the second set of coils comprises at least two pairs of coils.
9. (original) An assembly according to claim 8, wherein in the first homogeneous region each pair of coils generates a substantially zero first order magnetic field gradient and substantially equal second order magnetic field gradients of opposite senses.
10. (original) An assembly according to claim 1, wherein the first set of coils is superconductive.
11. (original) An assembly according to claim 10, wherein the second set of coils is superconductive.
12. (original) An assembly according to claim 11, wherein the second set of coils are made from high temperature superconductor.
13. (original) An assembly according to claim 11, wherein the second set of coils are located within a cryostat.
14. (currently amended) An assembly according to claim 13, wherein the first and second sets of coils are located within ~~the~~a same cryostat.
15. (currently amended) An assembly according to claim 1, wherein the second set of coils are self-contained so that the second set of coil can be separated from the first set of coils without compromising ~~the~~an operational integrity of the first set of coils.
16. (original) An assembly according to claim 1, wherein the second homogeneous region is substantially spherical.
17. (currently amended) An assembly according to claim 1, wherein the second homogeneous region is substantially disk shaped and has a magnetic field gradient in ~~the~~an axial direction.
18. (previously presented) An assembly according to claim 1, wherein the first

homogeneous region is located within the first set of coils.

19. (currently amended) An assembly according to claim 1, wherein ~~the~~ a magnetic field strength ~~of~~ in each of the first homogenous region and the second homogeneous region varies by no more than 100ppm.

20. (currently amended) An assembly according to claim 1, further comprising a power supply coupled to the first and second sets of coils so as continuously to energise the first and second sets of coils.

21. (currently amended) An assembly according to claim 1, further comprising an additional set of second coils located adjacent ~~an opposite side of~~ to the first set of coils and opposite to the ~~one second~~ set of ~~second~~ coils relative to the first set of coils.